

Abstract of the Disclosure

0068 A method for fabricating a CMOS gate electrode by using Re, Rh, Pt, Ir or Ru metal and a CMOS structure that contains such gate electrodes are described. The work functions of these metals make them compatible with current pFET requirements. For instance, the metal can withstand the high hydrogen pressures necessary to produce properly passivated interfaces without undergoing chemical changes. The thermal stability of the metal on dielectric layers such as SiO_2 , Al_2O_3 and other suitable dielectric materials makes it compatible with post-processing temperatures up to 1000°C . A low temperature/low pressure CVD technique with $\text{Re}_2(\text{CO})_{10}$ as the source material is used when Re is to be deposited.